ABSTRACT OF THE DISCLOSURE

METHOD AND SYSTEM FOR SYNCHRONIZING LOCATION FINDING MEASUREMENTS IN A WIRELESS LOCAL AREA NETWORK

A method and system for synchronizing location finding measurements in a wireless local area network (WLAN) provides a low cost mechanism for correcting location measurements within a WLAN location finding system. Multiple location receivers compute the time-of-arrival (TOA) of a reference transmitter signal, which is generally a beacon signal. The TOAs are collected and reported to a master unit that contains stored predetermined position information for the location receivers. The master unit computes the time-differences-of-arrival (TDOA) between multiple receivers and computes differences between the measured TDOAs and theoretical TDOAs computed in conformity with the predetermined position of each location receiver. The deviations between theoretical and measured TDOAs are collected in a statistical sample set and Kalman filters are used to produce a model of location receiver timebase offset and drift over multiple received beacon signals. The filter outputs are used to then either correct subsequent TDOA measurements for each location receiver, improving the accuracy of subsequent and/or prior TDOA measurements, or commands are sent to the location receivers to calibrate the timebases within the

location receivers in order to improve the accuracy of subsequent TOA measurements.